EXTENSIONS: Issue #3
For the PRO/FILE 2068 user

Here we are at issue #3 with 4 new routines, Spectrum and Sinclair microdrive compatibility, and some other useful information.

As stated in issue #2, I assume all previous enhancements have been made although they may not be necessary. Be sure to keep a backup copy of the program and data in case any errors are made when making these changes. Also, with a new save data routine in this issue, it will simplify later transfer if you have all your files saved as just data now.

First lets deal with a bug I found in the machine code sort routine. There is one situation when this routine will lock up the computer. If you sort by a line which will in some cases be the last line of the file and in other cases will not AND the line you sort by will have the same information in some files, the possibility exists for a crash. When the last line of one file is compared to a line which is not the last line of another and the information in the lines is identical the routine will eventually come to an end of line marker (code 1) in one case and the start of a new file marker (code 42) in the other. The routine locks up when this happens. I do not know enough about the routine to fix it, but it can be avoided. Either don't allow any identical information to be on the last line of any files, or put dummy information in a later line so the last line is moved down.

I chose the second option with my music list files. Originally the first line was the title, second was the composer, third was the difficulty level, and if I owned it there was a fourth line for the library number. Since the difficulty level in line 3 would often be the same and some files had 3 and others four lines, I added a period to make a fourth line in all 3 line files. This used 2 bytes of memory for each affected file (1 for the period and one end of line marker). With my UPDATE routine from issue #2, this was easy to do!

It's time to save more memory by using more variables. We will use H = 2, K = 10, Q = 32, and R = 256. All these are added to line 9996:

```
9996 LET P=VAL "20": DIM D$(VAL
"28020"): LET O=NOT PI: LET B=0:
 LET U=SGN PI: LET H=U+U: LET F=
H+H: LET G=VAL "7": LET K=VAL "1
0": LET J=VAL "15": LET Q=CODE "
 ": LET R=VAL "256": LET D$( TO
P)="*SEARCH IS COMPLETE*": LET A
$="ALL": LET C$="": FOR X=U TO J
: LET C$=C$+CHR$ X: NEXT X: LET
S=0
```

Now adjust any appropriate program lines. Remember that if you used my previous variables, you may have used U+U for 2 and CODE " " for 32. Change these as well. Also use combinations such as K-U (10-1) for 9 and K*K (10 times 10) for 100. Do not use variables in lines 9990, 9991 or (if you add the microdrive routines) 9900, 9901. Finally, for speed purposes in editting, don't use them between lines 5010 and 5103.

The next routine provides for a cursor wrap when editting files. The cursor always appears in the top left hand corner when editting so if to want to edit data in the lower right corner you must do a lot of cursor movement. This routine allows you to move from the top line to the bottom by moving the cursor UP and from the left side of the screen to the right by moving the cursor LEFT. The reverse is also true!

```
5108 LET C=C-U+(Q AND C=0): GO T
O VAL "5040"

5109 LET C=(C+U)*(C<Q-U): GO TO
VAL "5040"

5110 LET L=(L+U)*(L<G+G): GO TO
VAL "5040"

5111 LET L=L-U+(J AND L=0): GO T
O VAL "5040"

5112 LET E$(L+U)=E$(L+U, TO C)+E
$(L+U,C+H TO ): PRINT AT L,0;E$(
L+U): GO TO VAL "5040"+(VAL "68"
 AND C>0)
```

Here's a hint to save time when editting many files at about the same screen location. In line 5002 the variables L (for line) and C (for column) are set to zero, which means the upper left corner of the screen. That's why the cursor always starts there when editting. If, for example, you will be doing a lot of editting on line 5 and column 10, you can temporarily change line 5002 to make L = 4 (line 5 to the computer screen) and C = 9 (column 10 to the computer screen). This really speeds things up. If you intend to save ALL or BASIC, be sure to change the line back first.

If you will be making a lot of new files which will have some information identical to each other, here is a way to make just one and then duplicate it as often as you wish:

```
5003 IF Y$=" AND " THEN BEEP U/K
,J+J

5016 IF Y$)=" AND " AND Y$()" TH
EN " THEN ON ERR RESET: FLASH Ø:
 GO TO 6000

6030 GO TO F-(Y$=" STOP ")+(A*(Y
$=" STEP "))+(VAL "4996"*(Y$=" T
O "))+(VAL "4999"*(Y$=" AND "))
```

If you close the file with the token AND, you will hear a BEEP which means the file was saved, but the file will remain on screen where you can save it again as often as you like. Later you can go back and fill in any other data.

There are many situations where you want the last name listed first for alphabetizing purposes, but would prefer any printout to be in normal order. The next routine will allow you to print out any name on the first line in either order you prefer. The screen will not change and your files will be unaltered. Only the printout is affected.

Some guidelines to remember are that the routine will take anything up to the first space to be the last name and anything from there to the second space to be the last name. Any data after the second space will not be printed when the routine is activated. This can be used to your advantage. Also, since the routine looks for spaces, do not use commas to separate the names or it will appear after the last name on the printout. Some examples follow. The first column shows what is on the first line on the screen and the second shows the resulting printout when activated:

SMITH JOHN	JOHN SMITH
DOE, JOHN	JOHN DOE,
REAGAN RONALD (PRESIDENT)	RONALD REAGAN
JONES Jr BILL	Jr JONES

To activate the routine, just hold down the ENTER key when entering "C" for copy or starting an auto search with printout routine until the printer starts copying, then you can release the key. If you don't want the routine activated you better release the key quickly. On an auto search the routine will copy all files the same way once activated. When editting, if you press "THEN" for a printout, the name reverse is not activated.

```
7205 IF CODE INKEY$=J-H THEN LET
 Y=H

7206 IF Y<>H THEN GO TO VAL "721
3"

7207 LET L=0: LET C=0: FOR X=H T
O Q: IF E$(U,X)=" " THEN LET C=X
+U: GO TO VAL "7209"

7208 NEXT X: IF C=0 THEN GO TO V
AL "7212"

7209 FOR X=C TO Q: IF E$(U,X)="
" THEN LET L=X-U: LET X=Q

7210 NEXT X: IF L=0 THEN LET E$(
U)=E$(U,C TO )+" "+E$(U, TO C-H)
: GO TO VAL "7212"

7211 LET E$(U)=E$(U,C TO L)+" "+
E$(U, TO C-H)

7212 IF Y$="C" THEN LET Y=0

7213 FOR X=U TO LEN C$
```

Correct this line as on attached sheet

I needed a different type of routine for number crunching instead of the TALLY routine. Basically, I needed an entire line to be treated as one value instead of half and half, and I needed some of the answer printed out if necessary. The following is the result. I call it the SUM routine and it is designed to accept numeric data on line 15 (last line). The restrictions on what type of characters can be used as numeric information is the same as for the tally routine. I use it to keep track of each student's credit for a trip to Florida. Since many fundraising projects are required, I needed a full line to handle it all. The line gives the profit on each project so if line 15 shows this:

15.95+20+0+40.1+50

that would mean the student has made the following profit:

15.95 cheese sale
20.00 candy sale
00.00 car wash
40.10 fruit sale
50.00 cash payment

for a total of $126.05. This total would be shown in SUM2. SUM1 would show the combined profit of all found files. When printed out, SUM2 would be printed after the last line set up by the DEFP command. If you want a space between each file, put the space FIRST instead of last or the SUM2 will be printed after the space and right above the next file. Example: use 0/1 instead of 1/0. Activate the routine with the reverse slash followed by S.

```
 150 LET B=USR VAL "64101": CLS
: IF J$="S" AND Y AND T1 THEN LP
RINT TØ

1049 LET TØ=TØ-(TØ AND J$="S"):
IF E$(U, TO VAL "18")<>D$(H TO J
+F) AND CODE J$>Ø THEN GO TO VAL
 "8500"+CODE J$

7225 NEXT X: IF J$="S" AND Y$="C
" THEN LPRINT TØ

7229 IF J$="T" OR J$="S" THEN GO
 TO VAL "1049"+(Y$="C")

7235 IF Y AND A=0 THEN GO TO J*K

8582 GO TO U

8583 GO TO VAL "9250"

9105 PRINT AT J,0;"CNT=";T1;: IF
 J$="T" OR J$="S" THEN PRINT " S
UM1=";T;"  SUM2=";TØ
```

```
9200 POKE VAL "63798",J+U: LET E
$(U,U)=E$(U,U): IF USR VAL "6379
2" THEN LET T=T+VAL E$(U, TO J+U
)

9210 IF Y AND (J$="T" OR J$="S")
 THEN GO TO J*K

9250 POKE VAL "63798",Q: LET E$(
J,U)=E$(J,U): IF USR VAL "63792"
 THEN LET T=T+VAL E$(J): LET T0=
VAL E$(J)

9260 GO TO VAL "9210"
```

I kind of hate to say this, but I'm going to change the way we save data only. There are several reasons for this. First, it insures better compatibility with any changes Tom Woods may come up with because the order of the main variables will be restored to their original status. Second, it will allow data to be easily moved from different versions of PRO/FILE even if the length of D$ is different (however, D$ must be at least as long as the value held by P or the program won't work). Third, I have an idea for a routine that requires this new system.

If you are going to convert to a Spectrum version then you must make this change because the lines dealing with the microdrive save and load routines assumes you have!

First we must save the data much as we did in issue #1 with some adjustments since the data is now in a different position. To simplify matters we will make the adjustments in the data save routine first. It is also necessary that you have previously saved only the data as the program presently allows to make this easier to handle. Line 8205 will be further adjusted after the files are transferred.

```
 100 LET T1=0: INPUT "SEARCH COM
MAND? ";X$

 103 IF X$="AUTO" THEN GO TO VAL
 "5200"

8205 CLS : ON ERR GO TO VAL "800
0": IF X$="D" THEN LET D$(H TO G
+F)=F$: LET D$(K+H TO J+U)=STR$
P: SAVE F$CODE PEEK VAL "23627"+
R*PEEK VAL "23628"+K+H,P: GO TO
VAL "8220"

8230 BEEP U/H,J+J: GO TO U
```

Now load in each of your data tapes. As each one is loaded you should immediately resave and verify it (as data only!) on another tape before doing anything else. When a data file has been saved and verified, load in the next data file to be transferred and repeat the process.

When all the data has been saved this new way, we can change our lines for loading it back in and also adjust line 8205 slightly. First POKE 64095,6 and POKE 64754,6 to correct the machine code routines then:

```
  3 LET D$( TO K+K)="*SEARCH IS
 COMPLETE*": POKE VAL "23609",E:
 LET J$="": LET A=0: LET X$="":
LET T=0: LET TØ=0
```

Insert line 1080 from cover sheet here →

```
5505 PRINT AT J+U,U;"   LOAD DAT
A ONLY? (Y OR N)   ": PAUSE 0: L
ET X$=INKEY$: IF X$="Y" THEN LOA
D ""CODE PEEK VAL "23627"+R*PEEK
 VAL "23628"+G-U: LET F$=D$(H TO
 G+F): LET P=VAL D$(K+H TO J+U):
 BEEP U/H,VAL J+J: GO TO U

8205 CLS : ON ERR GO TO VAL "800
0": IF X$="D" THEN LET D$(H TO G
+F)=F$: LET D$(K+H TO J+U)=STR$
P: SAVE F$CODE PEEK VAL "23627"+
R*PEEK VAL "23628"+G-U,P: GO TO
VAL "8220"

9850 PRINT "FILE: "; INK G;F$; I
NK F-U;"     ORDER: "; INK G;S,
INK F-U;"OPEN: "; INK G;LEN D$-P
;: PRINT "bytes";TAB 0;: PRINT
"FORMAT:"; INK G;A$,,,TAB 0;: RE
TURN

9996 DIM D$(VAL "28020"): LET P=
VAL "20": LET O=NOT PI: LET B=0:
 LET U=SGN PI: LET H=U+U: LET F=
H+H: LET G=VAL "7": LET K=VAL "1
0": LET J=VAL "15": LET Q=CODE "
 ": LET R=VAL "256": LET A$="ALL
": LET C$="": FOR X=U TO J: LET
C$=C$?CHR$ X: NEXT X:LET S=0
```

Now save a new master copy with RUN 9990 for as many copies as you want. This new master will accept the new data tapes we made.

If you purchased a Spectrum emulator like myself you may prefer to use PRO/FILE in Spectrum mode. I use the ROM Switch but I assume this should work with any emulator or a regular Spectrum. If you have added Sinclair microdrives, I have added routines for their use as well. I use them regularly and they are a great time saver. In fact, I expect to buy another set-up so I can use microdrives at home and on my Timex at school.

To run on the Spectrum we must eliminate any ON ERR GO TO or ON ERR RESET commands because the Spectrum won't accept them and also make two POKES in the machine code routines because the Spectrum handles USR a little differently than the Timex.

First POKE 63666,0 and POKE 63667,0

Now change the following lines:

```
  5 IF INKEY$=" " THEN PRINT AT
 VAL "21",0; FLASH U;"STOP TO EX
IT/ENTER TO CONTINUE ": PAUSE 0:
 GO TO F+U+(VAL "9395" AND INKEY
$=" STOP ")

 60 DELETE THIS LINE

5007 DELETE THIS LINE

5016 IF Y$)=" AND " AND Y$<>" TH
EN " THEN FLASH 0: GO TO 6000

5222 IF VAL Z$)=0 AND VAL Z$<=J
THEN GO TO VAL "5230"

5230 IF VAL Z$ THEN LET S=VAL Z$
: CLS : GO TO VAL "5240"

8000 DELETE THIS LINE

8205 CLS : IF X$="D" THEN LET D$
(H TO G+F)=F$: LET D$(K+H TO J+U)
=STR$P: SAVE F$CODE PEEK VAL "23
627"+R*PEEK VAL "23628"+G-U,P: G
O TO VAL "8220"

8220 BEEP U/H,J+J: PRINT AT K+K,
G;"REWIND TO VERIFY": IF X$<>"D"
 THEN VERIFY F$

9400 PAUSE K+K: LET Y$=" STOP ":
 GO TO U
```

Since we have eliminated some error checking, you must use reasonable care in using the program. For example, don't press BREAK when editting a file and make sure you actually input a number rather than other characters when telling the program what line to sort by! I have been using PRO/FILE with my ROM Switch for a long time now with absolutely no problems.

A couple of other points. It is assumed that you will always verify any saved data. If the data fails to verify or you press BREAK, the program will stop with an error report at the bottom of the screen. GO TO 1 will get you back to the menu where you can try again. Also, on the Spectrum you will have a problem if you save ALL. When you poke RAMTOP as I do on the 2068 version, RAMTOP is properly set, but on the Spectrum that isn't enough. If you want to save ALL you can, but before you load it back in to a newly turned on computer you must first enter CLEAR 63487 to set RAMTOP properly!

If you use a full size printer option there are some necessary changes needed which I have tried to make, but have no way to test since I have no full size printer. Therefore, to be safe, delete line 1 (and 2 if using the Byte Back serial interface). I don't know what line 1 POKES if used on the Spectrum, but it isn't what it's supposed to be so we definately don't want to activate those commands! Line 2, if appropriate, may or may not be a problem, but let's not take any chances. After we finish transferring this program to the Spectrum (with or without microdrive options) and have a master copy safely made, I'll show you how I THINK you can still use a full size printer. If my solution is faulty, you can still use the regular 32 column printer until a final solution is found.

The pause routine when using UPDATE requires you to press STOP instead of BREAK to exit. Finally, because of the machine code differences on the 2068 and Spectrum you can not use the Spectrum version with the 2068 ROM or vice-versa (however, data tapes are completely compatible!).

Make a master copy by entering RUN 9990.

To use the Sinclair microdrives, you must now load the new master copy just made into your computer in Spectrum mode with Interface I connected! Now change the following:

```
5503 CLS : PRINT AT K,F+U;"T)APE
 OR M)ICRODRIVE?": PAUSE 0: LET
P$=INKEY$: GO TO VAL "5503"+(U A
ND P$="T" OR P$="t")+(VAL "297"
AND P$="M" OR P$="m")

5800 PRINT AT J+U,F;"INPUT FILE
NAME TO LOAD",: INPUT F$: IF LEN
 F$<U OR LEN F$>K THEN GO TO U

5805 LOAD *"M";U;F$CODE PEEK VAL
 "23627"+R*PEEK VAL "23628"+G-U:
 LET F$=D$(H TO G+F): LET P=VAL
D$(K+H TO J+U): BEEP U/H,J+J: GO
 TO U

8202 CLS : PRINT AT K,F+U;"T)APE
 OR M)ICRODRIVE?": PAUSE 0: LET
P$=INKEY$: GO TO (VAL "8300" AND
 P$="M" OR P$="m")+(VAL "8205" A
ND P$="T" OR P$="t")

8300 CLS : IF X$="D" THEN LET D$
(H TO G+F)=F$: LET D$(K+H TO J+U
)=STR$ P: ERASE "M";U;F$: SAVE *
"M";U;F$CODE PEEK VAL "23627"+R*
PEEK VAL "23628"+G-U,P: VERIFY *
"M";U;F$CODE PEEK VAL "23627"+R*
PEEK VAL "23628"+G-U
```

```
8310 GO TO VAL "8230"

9900 CLEAR : ERASE "M";1;"PRO/FI
LE": ERASE "M";1;"p/f": SAVE *"M
";1;"PRO/FILE" LINE VAL "9901":
SAVE *"M";1;"p/f"CODE VAL "63488
",VAL "2046": VERIFY *"M";1;"PRO
/FILE": VERIFY *"M";1;"p/f"CODE
: BEEP VAL ".5",VAL "40": GO TO
VAL "9996"

9901 BORDER NOT PI: PAPER NOT PI
: INK VAL "7": CLEAR VAL "63487"
: LOAD *"M";1;"p/f"CODE : CLS :
POKE VAL "23658",VAL "8": GO TO
VAL "9996"
```

9997 At the end of this line, change GO TO VAL "5505" to be GO TO VAL "5503"

Make a tape master with RUN 9990 or a microdrive master with RUN 9900.

You can only save DATA to a microdrive. If you try to save ALL or BASIC and then select the microdrive option, you will be returned to the main menu.

You can use one cartridge for your master and others for data but I prefer to save a master copy to each cartridge I will use. This will take about 90 seconds since the program will first try to erase any old copies on the cartridge. Since there isn't one it takes longer. In the future, if you save a new version on the same cartridge, it is much quicker. The same thing happens when you save data. The first time you save data with a particular name, it takes longer. Also, be sure you never save different data with the same name to the same cartridge!

After a master copy has been placed on each cartridge you need, use NEW to clear the computer and type the following program:

```
10 LOAD *"M";1;"PRO/FILE"
```

Save this program on each cartridge containing a master copy with SAVE *"M";1;"run" LINE 10

To load in a microdrive master just start with a newly turned on computer or one that just executed the NEW command and enter RUN. This will load the short program which will then load the master.

As written, all loading and saving must be done using drive #1.

Now with that copy safely tucked away, let's see if we can restore full size printer compatibility. First make line 1:

```
1 POKE VAL "23749",VAL "187":
POKE VAL "23750",VAL "248"
```

If you have the Byte Back interface you can restore line 2 as it originally was in the manual.

Now POKE 64197,84 and POKE 64198,31.

At this point save a master copy (but do not replace the previous 32 column printer copy in case this doesn't work!).

I am almost positive this will work in all cases except on the Byte Back interface because I don't know anything about line 2. I would really appreciate it if my customers would let me know of any success or failures. If it doesn't work, I will send free corrections when I fix it.

To restore the program to accept the 32 column printer, the pokes made in line 1 should be reset to 244 and 9 respectively.

Robert C Fischer; 221 Scoggins St; Summerville, Ga 30747

I marked in the regular text
where the corrections should be made
so you can avoid adding this sheet
to your copies.

ERROR REPORT

Two lines need fixing in this issue of Extensions #3. If you use the new data save in this issue, you must also change line 1080 (I left it out, sorry). If you don't make this correction, you will be able to edit the file which says "SEARCH IS COMPLETE" which will cause all kinds of problems! No harm is done if you don't try to edit or delete it. Here is the correction:

```
1080 IF PEEK VAL "64026"+R*PEEK
VAL "64027"<>PEEK VAL "23627"+R*
PEEK VAL "23628"+G-U AND (Y$="D"
 OR Y$="E") THEN GO TO VAL "4000
"
```

Also, the Name Reverse routine should have line 7213 changed as follows:

```
7213 FOR X=U TO LEN C$: IF CODE
C$(X)=0 THEN LPRINT
```

Without this, you can not print blank lines between files!